and wherein the first network and the second network are not under the control of the third network.

REMARKS

REJECTIONS UNDER 35 USC 112

Claims 1 and 2 were rejected under 35 USC 112 ¶ 1. This rejection is respectfully traversed to the extent that the rejection is directed to a supposed deficiency in applicants' disclosure. The language of these claims is intended to point out that, in accordance with applicants' invention as defined by these claims, one party cannot determine from the addresses in the received packets one or both of a) a logical identity and b) a geographical identity of the other party. The specification makes clear at, for example, pp. 26-30 how this can be carried out and it is therefore respectfully submitted that there is no deficiency in applicants' specification. However, the language of these claims has been amended to more clearly and distinctly point out this aspect of the invention. Claims 12 and 13 have been similarly amended.

Claims 18, 26 and 33 were rejected under 35 USC 112 ¶ 1 on the grounds that the specification does not describe the terms "trusted network" and "untrusted network" in such a way as to enable one skilled in the art to make and/or use the invention. This rejection is respectfully traversed. As indicated at, for example, p. 9, lines 15-18, an untrusted device (and hence an untrusted network) is a device (and hence a network) that is not under the direct control of the entity operating the trusted network, e.g., the service provider. The language of these claims has, however, been amended to more clearly and distinctly point out this aspect of the invention by defining the relationship

among the recited "first," "second" and "third" networks in terms of direct control rather than in terms of "trust."

PRIOR ART REJECTIONS

Claims 1-46 were rejected under 35 USC 102(e) as being anticipated by Borella et al (Borella). This rejection is respectfully traversed.

Applicants' Invention

Attention is respectfully directed to pp. 26-30 of the applicants' specification where the invention is explained. In particular, applicants' invention is directed to a technique for maintaining calling/called parties' privacy by translating addresses or caller ID information. Illustratively two translations are carried out for both the source address and the destination address that are included in each packet.

Let us first focus on the source address contained in a packet sent by a calling party. The calling party has a local address that it uses for packets that it communicates to the network. This is source address (SA) 10.10.1.5 shown in Table 1 (p. 27). When a packet containing that source address is received by the local network edge device, the latter translates the source address 10.10.1.5 into a global address 135.4.1.7, as seen in Table 2. The global address was illustratively established during call set-up and the global address is such that the called party cannot determine the calling party's logical identity, or the calling party's geographical location, or both. When the packet is then sent across the network to the terminating network edge device, the packet contains only the global address 135.4.1.7 as the source address. The terminating network edge device translates the global address 135.4.1.7 associated with the calling party into the

address 10.10.100.19, as seen in Table 3. This address is an address consistent with the address domain of the terminating network and is regarded by the called party as the address of the calling party. However, again, the called party cannot determine from this second source address at least one of a) the calling party's logical identity, and b) the calling party's geographical location. When sending a packet back to the calling party, the called party will address the packet to address 10.10.100.19 and the network will again, use global address translation to ultimately deliver the packet to the calling party at its 10.10.1.5. As seen from the foregoing, however, that address is completely hidden to the called party. The privacy of the calling party is thus maintained.

A similar mechanism is in play with respect to the destination address (DA).

In accordance with an advantageous feature of the invention, the global addresses may be released after a call is completed, thereby allowing the global addresses to be used for another, unrelated call.

Borella Reference

In Borella, the logical identity and geographical identity of the parties is not hidden at all because the network addresses are not translated. Certain port numbers are sent *along with* the network addresses, as will be discussed momentarily, but the network addresses themselves are not changed. Borella thus does not show or suggest or disclose applicants' invention, nor do applicants' claims read on that which Borella does disclose.

In particular, the problem to which Borella is directed is that of allowing a small home office or small network (referred to herein for convenience as the "local" network") to exist behind a single IP address (col. 1, lines 29-35). In order to overcome certain problems with the prior approach, known as NAT, Borella discloses a protocol, referred to as PAP, that assigns a so-called globally unique port number to each device on the office/small network. That port number is then used in the TCP header of

packets that are sent out from the local network so that when packets are sent back *to* the local network from an external network, the local network's router can determine which of its devices the packet should be routed to.

Thus FIG. 1 of Borella shows a local area network to which are connected devices 14, 16, 18 etc., which are PCs, telephones, etc. Each of these devices has one of the local addresses 10.0.0.1, 10.0.0.2, 10.0.0.3, etc. Those local addresses are not used in communication with the outside world. Rather, each of the devices 14, 16, 18, etc. has one or more associated port numbers that are set up in cooperation with their associated router 26 that is also connected to the network. Router 26 also has a local address—illustratively 10.0.0.7—by which it communicates with the other devices on the local network. Router 26 also, however, has an IP address 198.10.20.30. Any outgoing packet from one of devices 14, 16, 18, etc. contains both the IP address 198.10.20.30 and one of the port numbers assigned to it by router 26.

More particularly, reference may be made to Borella's example discussed beginning at col. 10, line 32. Device 14 initially generates a request data packet as shown in TABLE 2. This packet includes source (SRC) and destination (DST) IP addresses. It also includes source and destination port numbers. It would appear that this packet is not actually sent anywhere. Rather, before the packet leaves device 14 on its way to router 26, "an outer IP 48 header is added to route the request to router 26 [col. 10, lines 65-66]." TABLE 3 shows how the outer IP 48 header has been added to what is in TABLE 2.

The address in the packet as shown in TABLE 3 is what is received by router 26. Router 26 thereupon "strips the outer IP 48 header, and sends the request data packet to external network 30." [col. 11, lines 13-16]. That is, the request packet as sent to network 30 is what is shown in TABLE 3 but *without* the "Outer IP 48 header". Only the information in the two right-hand columns of TABLE 3 leaves router 26.

Network 30 uses those very same addresses and port identifications in sending packets back to network 12, but with the source and destination roles reversed. This is

seen in TABLE 4 of Borella, showing that the packet that is received back by router 26 from network 30 contains the same information as the two right-hand columns in TABLE 3 except that the SRC and DST labels are reversed because the original destination is now the source for the return packet and vice versa. At this point, router 26 adds back an outer IP 48 header so as to be able to route the response data packet back to network device 14 [col. 11, lines 34-35]. As can be seen from TABLE 5, that header is the same as the "Outer IP 48 header" in TABLE 3 except, again, with the SRC and DST labels reversed.

Applicants have attached hereto an Appendix showing a figure that provides another way to quickly see just what is going on in Borella. For convenience, and in order to more quickly and clearly see what is transmitted by which entity to which other entity, the Appendix labels the three columns of IP addresses and port designations as A, B and C. And the designations A, B, and C are used to signify the fact that the actual addresses and port numbers are the same for the return packet, but with the SRC and DST designations reversed. This figure makes it quite apparent that what is happening in Borella is that router 26 strips off the Outer IP 48 addresses (box A) before sending the packet on to router 36 and network 30 and adds them back on the return.

Applicants' Claims

We can now turn to the language of applicants' claims.

Claims 1-2 require, per independent claim 1, that the source address be translated in such a way that it does not indicate at least one of a) a logical identity or b) geographical identity of the calling party.

Borella does not meet the language of these claims.

It is true, as the Office action points out, that the local addresses 10.0.0.1, 10.0.0.2, 10.0.0.3, etc. in Borella are hidden from entities outside of the local network 12. However, the IP address 198.10.20.30 of the local network's router serves to

identify the geographical location of devices 14, 16, 18, etc. and the port number The fact that the local addresses used among the devices of the local network are hidden does not mean that their logical identities are hidden because the IP address 198.10.20.30 combined with a port number completely identifies each device.

In addition, claim 2, similar to claim 1, requires that the destination address be translated in such a way that it does not indicate at least one of a) a logical identity and b) geographical identity of the called party. Again, Borella does not meet the language of this claim for at least the reasons given above relative to claim 1.

Claims 3-11 recite, by virtue of recitations in independent claim 3, that the first and second global addresses are sent from a first network edge device to another. Borella's network edge devices are routers 26 and 36. Thus the addresses that that get communicated between Borella's network edge devices necessarily must be regarded as the addresses corresponding to the first and second global addresses of applicants' claim.

What are those addresses? Borella indicates that the addresses communicated between Borella's network edge devices are those shown in the two right-hand columns of TABLE 3. Note col. 11, lines 14-16 of Borella indicating that "router 26 receives the request data packet [from device 14], strips the outer IP 48 header, and sends the request data packet to external network 30."

For convenience in this discussion, applicants have reproduced below TABLE 3 from the Borella patent, showing the request data packet that router 26 receives from device 14 with the two rows of the table being labeled Address X and Address Y. Applicants also show below a table labeled TABLE 3a, which shows what router 26 sends to router 36—namely the request data packet with the outer IP 48 header stripped off, per Borella's disclosure. That is, Tables 3 and 3a are identical except that Table 3a does not have the Outer IP 48 header and with the two rows being labeled Address X' and Address Y'.

TABLE 3

Outer IP 48 Header	Inner IP 48 Header	TCP 58 header	
SRC IP: 10.0.0.1	SRC IP: 198.10.20.30	SRC port: 2	← Address X
DST IP: 10.0.0.7	DST IP: 192.200.20.3	SRC port: 80	← Address Y

TABLE 3a

Inner IP 48 Header	TCP 58 header	
SRC IP: 198.10.20.30	SRC port: 2	← Address X'
DST IP: 192.200.20.3	SRC port: 80	← Address Y'

Thus if claims 3-11 are going to read on Borella, then Address X' and Address Y' shown in TABLE 3a must said to correspond to applicants' recited first and second global addresses, respectively. Again, *those* are the addresses that claims 3-11 state are transmitted between the network edge devices.

However, Address X' and Address Y' are not arrived at by any "translating" as claim 3 requires. They are arrived at by stripping away the so-called Outer IP 48 header, i.e., the first column in TABLE 3. Stripping something away is not the same as a "translating." Thus on this basis alone, one cannot say that claim 3 is anticipated by Borella.

But let it be assumed for purposes of argument that that the stripping away of the Outer IP 48 header—that is the conversion from TABLE 3 to TABLE 3a—can be said to be a kind of "translating." Then going further in the claim, one would have to say that the entire Address X and the entire Address Y from Table 3 must correspond to applicants' recited "first source address" since the claim requires that the first global address be arrived at by "translating a first source address" and the only operation involving the generation of Address X' and Address Y' is the stripping away of the

Outer IP 48 header from Table 3. There is nothing else for these words of claim 3 to read on.

However, independent claim 3 goes on to call for translating the first global address into a second source address that is local to the third network. Here is where any possible reading of claim 3 on Borella begins to breaks down. Again Address X' must be the first global address and Address Y' must be the second global address because claim 3 says that it is the global addresses that are transmitted between network edge devices. But, *contrary to claim 3, line 11*, Address X' (the supposed "first global address" is not translated into a second source address. The only change made to Address X' is that it was previous indicated to be a source address and later is indicated to be a destination address in the return packet. See TABLE 4 of Borella. Thus Address X' is not translated. And even if its re-labeling can be said to be a kind of translating, that re-labeling does not turn Address X' into "a second source address," as claim 3 requires but, rather, into a destination address.

Moreover, *contrary to claim 3, line 13*, Address Y' (the supposed second global address) is not translated into a second destination address. The only change made to Address Y' is that it was previous indicated to be a destination address and later is indicated to be a source address in the return packet. See TABLE 4 of Borella. Thus Address Y' is not translated. And even if its re-labeling can be said to be a kind of translating, that re-labeling does not turn Address Y' into "a second destination address," as claim 3 requires but, rather, into a source address.

Of course, there may be other ways that the Examiner believes that the language of independent claim 3 can be lined up with Borella. For example, one might take the position that applicants' source addresses correspond to the local addresses 10.0.0.1, 10.0.0.2, 10.0.0.3, etc. of local network 12 and that the translation of those local addresses into the various globally unique port numbers in Borella is intended to correspond to the "translating" called for in applicants' claims. In this case, however, applicants do not see what would correspond to the recitation in claim 3 of translating a

first *destination* address into a *second* global address, nor do applicants see what would correspond to the further recitations in claim 3 that call for translating the first and second global addresses into second source and second destination addresses.

Various other ones of dependent claims 4-11 more particularly define various aspects of how the various source, destination and global addresses are translated from one to the other. In light of the fact that claim 3 cannot be said to read on Borella, these more detailed limitations vis-à-vis the source, destination and global addresses cannot be said to be anticipated by Borella either.

Specific note may be made of claim 8. This claim, which depends from independent claim 3, is directed to the above-mentioned feature of applicants' invention wherein the global addresses are released for use in translating other source and destination addresses once the call is completed. This claim further distinguishes the invention from Borella. In Borella, the exact same addresses are used for every call between a particular pair of endpoints.

The remaining claims in the application 12-46 recite the invention in various contexts, including claims directed to a computer-readable medium whose stored instructions carry out the invention as discussed above, and/or claims that focus specifically on the carrying out of the invention either at one end of the call, e.g., the calling end, or at the other end of the call, e.g., the called end, or at both. These claims distinguish the invention from Borella for substantially the reasons already noted vis-à-vis claims 3-11.

Request for Greater Specificity

Applicants have done their best to see how, or in what way, applicants' claims might be said to read on Borella—word for word and limitation for limitation. As can be seen from the foregoing, applicants do not believe that there *is* any way that applicants' claims can be said to read on Borella.

In the event that the rejection of applicants' claims based on Borella is to be maintained, it is respectfully requested that any further Office action indicate with greater specificity which specific aspects of Borella's various source addresses, destination address, etc. are thought to line up with the limitations of applicants' claims and how the teachings in Borella anticipate the specific translations among these various addresses called for in applicants' claims, giving due regard to applicants' other limitations, such as the various network edge devices called for in the claims.

The rejections are so general as to not provide applicants with a clear basis on which to address the rejection, although applicants have certainly tried to do so. The Office action quotes whole blocks of text of the claims and then points to large blocks of text in Borella that are asserted to anticipate that claim language. Various portions of Borella's text are pointed to in isolation without indicating how the teaching at any particular cited portion of Borella's text relates to the teachings at any other point so as to provide an overall teaching of something that would anticipate applicants' claims.

Given the generality of the Office action, it is not at all clear how the *particular* recitations in applicants' claims are supposed to line up with the particular teachings of Borella. For example, it is not clear which addresses in Borella, e.g., the various addresses shown in various ones of Tables 2-12 are intended by the Office action to correspond to the first source address, and destination addresses and global addresses that are recited in applicants' claims. Nor is it clear which of the various adding and stripping of various parts of Borella's addresses are regarded by the Office action as corresponding to the various translation steps set forth in applicants' claims.

It may well be that one could find within Borella entities that can be identified as source addresses, destination addresses, global port identifiers, etc. but *not,* applicants submit, translated, sent and received in the manner that applicants' claims call for.

Reconsideration is requested and passage of the application to issue are earnestly solicited.

Serial No. 09/366,678 Attorney Docket No. 113335C

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES

1. (Amended) A method for connecting a call between a calling party and a called party, comprising:

translating a source address for a first ~~pluarlity~~ plurality of packets associated with the call in such a way that the translated source address does not indicate at least one;

~~sending the first plurality of packets to the called party without the called party receiving the source address that indicates at least one from the group~~ of a logical identity of the calling party and a geographical identity of the calling party; and

sending the first plurality of packets to the called party.

2. (Amended) The method of claim 1, further comprising

translating a destination address for a second plurality of packets associated with the call in such a way that the translated destination address does not indicate at least one;

~~sending the second pluarlity of packets associated with the call at the calling party from the called party without receiving the destination address indicating at least one from the group~~ of a logical identity of the called party and a geographical identity of the called party; and

sending the second plurality of packets to the calling party.

12. (Amended) A computer-readable medium having stored thereon instructions for privately connecting a call between a calling party and a called party, the instructions when executed by a processor cause the processor to:

send information associated with the call from the calling party to the called party ~~without the called party receiving a source address that indicates at least one from the group~~ a source address that does not indicate at least one of a logical identity of the calling party and a geographical identity of the calling party.

13. (Amended) The computer-readable medium of claim 12 having stored thereon instructions that when executed by the processor further cause the processor to:

receive at the calling party information associated with the call ~~at the calling party~~ from the called party ~~without receiving the~~ with a destination address ~~indicating at least one from the group~~ that does not indicate at least one of a logical identity of the called party and a geographical identity of the called party.

18. (Amended) The computer-readable medium of claim 14, wherein:

the first network and the third network are not under the direct control of the entity that operates ~~untrusted networks, and~~

the second network ~~is a trusted network~~.

26. (Amended) The method of claim 23, wherein

the first global address and the second global address are translated at an edge router connecting a third network to the second network,

and wherein the first network and the second network are ~~untrusted networks, and~~not under the control of

the third network ~~is a trusted network~~.

33. (Amended) The computer-readable medium of claim 30, wherein:

the first global address and the second global address are translated at an edge router connecting a third network to the second network,

and wherein the first network and the second network are ~~untrusted networks, and~~not under the control of

the third network ~~is a trusted network~~.

Serial No. 09/366,678 Attorney Docket No. 113335C

Appendix

Source and Destination Addressing in Borella et al Patent No: 6,353,614